

**CLAIMS**

1. An isolated protein having a serine/threonine kinase domain, a DFKSRN or DLKSKN sequence in subdomain VIB and/or a GTKRYM sequence in subdomain VIII.
- 5 2. A protein according to claim 1, which additionally comprises an ATP-binding sequence that is Gly-Xaa-Gly-Xaa-Xaa-Gly in subdomain I, and a Lys residue in subdomain II.
3. An isolated protein having a serine/threonine kinase domain which has more than 50% identity to the kinase domain of any of the amino-acid sequences identified herein as SEQ ID. Nos. 2, 4, 6, 8, 10, 12, 14, 16 and 18.
- 10 4. A protein according to claim 3, wherein the identity is more than 60%.
5. A protein according to any preceding claim, having serine/threonine kinase activity.
- 15 6. An isolated protein having all or part of any of the amino-acid sequences identified herein as SEQ. ID Nos. 2, 4, 6, 8, 10, 12, 14, 16 and 18, and activin receptor type I functionality.
- 20 7. An isolated protein having an amino-acid sequence corresponding to part or all of the amino-acid sequence of an activin type I receptor, and wherein the protein has at least one of the following characteristics:-
  - (i) serine/threonine kinase activity;
  - 25 (ii) activin-binding activity; and
  - (iii) activin type II receptor interaction.
8. An isolated protein having all or part of any of the amino-acid sequences identified herein as SEQ. ID Nos. 2, 4, 6, 8, 10, 12, 14, 16 and 18, and TGF- $\beta$ -type I receptor functionality.
- 30 9. An isolated protein having an amino-acid sequence corresponding to part or all of the amino-acid sequence of a TGF- $\beta$ -type I receptor, and wherein the protein has at least one of the following characteristics:
  - (i) serine/threonine kinase activity;
  - 35 (ii) TGF- $\beta$ -binding activity; and
  - (iii) TGF- $\beta$ -type II receptor interaction.

10. A protein according to any of claims 1 to 5, having all or part of the amino-acid sequence identified herein as SEQ ID No. 2.
11. A protein according to any of claims 1 to 7, having all or part of the amino-acid sequence identified herein as SEQ ID No. 4.
12. A protein according to any of claims 1 to 5, having serine/threonine kinase activity and all or part of the amino-acid sequence identified herein as SEQ ID No. 6.
13. A protein according to any of claims 1 to 7, having all or part of the amino-acid sequence identified herein as SEQ ID No. 8.
14. A protein according to any of claims 1 to 5, 8 and 9, having all or part of the amino-acid sequence identified herein as SEQ ID No. 10.
15. A protein according to any of claims 1 to 5, having all or part of the amino-acid sequence identified herein as SEQ ID No. 12.
16. A protein according to any of claims 1 to 5, having all or part of the amino-acid sequence identified herein as SEQ ID No. 14.
17. A protein according to any of claims 1 to 7, having all or part of the amino-acid sequence identified herein as SEQ ID No. 16.
18. A protein according to any of claims 1 to 5, having all or part of the amino-acid sequence identified herein as SEQ ID No. 18.
19. A protein according to any preceding claim, that is a soluble receptor.
20. An antibody which binds specifically to a protein as defined in any of claims 1 to 19 and not to at least one other such protein.
21. An isolated nucleic acid molecule which codes for, or is complementary to a nucleic acid molecule which codes for, a protein as defined in any of claims 1 to 19.
22. A recombinant nucleic acid molecule comprising at least two heterologous sequences, one of which codes for,

or is complementary to a nucleic acid molecule which codes for, a protein as defined in any of claims 1 to 19.

23. A molecule according to claim 21 or claim 22, wherein the protein is a TGF- $\beta$ -type I receptor.

5 24. A molecule according to claim 21 or claim 22, wherein the protein is an activin receptor.

25. A DNA or RNA/mRNA molecule according to any of claims 21 to 24.

10 26. A molecule according to any of claims 20 to 24, which additionally comprises, operably associated with the coding sequence, a sequence adapted to allow expression of the protein.

27. A host comprising a molecule according to claim 26, which is capable of expressing the protein.

15 28. A host according to claim 27, which comprises PAE cells.

29. A host according to claim 27 or claim 28, transfected with the Chim A receptor plasmid.

30. A product according to any preceding claim, for therapeutic or diagnostic use.

20 31. Use of a product according to any of claims 1 to 29, for the manufacture of a medicament for use in treating a condition associated with TGF activity.